

BIODEGRADABLE AND RECYCLABLE MATERIALS

Discarded biodegradable product and packaging materials are converted to environmentally acceptable physical and/or chemical forms by the action of sunlight or natural microorganisms. Recyclable materials may be reprocessed for further use.

Status:

Packaging is seen by the public as a major factor in the growing solid waste disposal crisis. Steadily increasing public concern has resulted in significant increases in research efforts to produce recyclable and biodegradable polymer materials. Biodegradable materials may be converted to a more dispersible physical form by microbial action (as by incorporating starch), substantially metabolized (as in the case of new cellulose-based materials) or degraded by sunlight or enzymatic action to more acceptable chemical forms. While most polymers can, in principle, be reprocessed for further use, problems arise in the identification and sorting of waste materials or, in the case of layered or co-polymers, in separating mixtures into their component parts. While products in all categories are beginning to appear, many of these efforts are in their initial stages.

Likely Scenario:

Continued rapid growth in public demand for biodegradable or recyclable materials is expected, fueled by environmental and conservation concerns. More than 70% of landfills are expected to be closed within five years. Anti-smoking forces may support demands for biodegradable films, packages and filters. Thus biodegradable/recyclable package and product components will become important product attributes during the plan period.

Alternate Scenario:

National or state legislation may be passed requiring the use of degradable or recyclable materials and/or restricting the release of specific packaging components to the environment.

R&D Response:

A coordinated program to monitor all developments in this area is essential. New developments should be identified at the earliest stage and developed for our use as quickly as possible. Areas of potential importance include biodegradable filter materials, biodegradable/recyclable packaging and the utilization of recycled materials in our packaging. Analytical tools for the identification of packaging components should be reviewed and updated as necessary.

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